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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/928,833	08/14/2001	Fumio Matsui	MATSUI 5	8102

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BROWDY AND NEIMARK, P.L.L.C.  
624 Ninth Street, N.W.  
Washington, DC 20001-5303

EXAMINER

ANGEBRANNDT, MARTIN J

ART UNIT PAPER NUMBER

1756

DATE MAILED: 06/12/2003

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Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

09/928,833

Applicant(s)

MATSUI ET AL.

Examiner

Martin J Angebrannt

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 11/17/01, 2/26/02 & 4/9/02.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-18 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-18 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 3 & 4.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

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1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 15-17 are rejected under 35 U.S.C. 102(b) as being fully anticipated by Hamer, "The Cyanine Dyes and Related Compounds", pp. 244-269, 274-279 and 398-433 (1964).

See the heptamethine dyes disclosed on pages 244-269 (straight chain) and 274-279 (cyclic containing chain) for claims 15 and 16. These are the same class of dyes shown in formulae 1-20 of the instant specification. See the styryl dyes on pages 398-433 which include those disclosed in formulae 25-33 in the instant specification. See dye VIII on page 252 (comparable to chemical formula 11 of the instant specification) and XIX and text on pages 267-268 (comparable to formula 19 of the instant specification) See also formula XV on page 277. See dye I on page 398, which is comparable to formula 25 of the instant specification.

The examiner would like to point out that as the reference was published in 1964, the applicants certainly lack any claim to the broad classes of dyes disclosed and somewhat

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embraced by the claims. The examiner is of the opinion that the applicant is extremely unlikely to gain patent coverage for any embodiments beyond possibly the method claims as the dyes and optical recording media containing them are old and well known in the art.

4. Claims 1,2,4-7,15,16 and 18 are rejected under 35 U.S.C. 102(b) as being fully anticipated by Ueno et al. '163.

Comparative example 1 in column 14 discloses the use of a compound embraced by the language of formula 1 of the claims and it is used in a optical recording medium. The language of claim 5 is considered intended use. Examples in table 4 includes an optical recording medium that uses dye 21 disclosed in table 2, which is comparable to formula 34 of the instant specification.

5. Claim 1,2, 5-7 and 15-16 are rejected under 35 U.S.C. 102(b) as being fully anticipated by Namba et al. '231.

Namba et al. '231 teaches the use of mixtures of dyes to cover the entire spectral range. The NK and IR dyes of table III are cyanine dyes. The absorption maxima of the dyes is given in tables I,II and III and the wavelength of useful lasers is disclosed in the table in column 3.

6. Claims 1,2,5-9 and 12-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Namba et al. '231.

It would have been obvious to one of ordinary skill in the art to use short wavelength lasers, such as the Ar ion or the He-Cd laser with the media exemplified with a reasonable expectation of achieving useful data storage based upon the disclosure and the absorption spectra of the recording layers.

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7. Claims 1, 2, 5-9 and 13-16 are rejected under 35 U.S.C. 102(b) as being fully anticipated by Nanba et al. JP 60-204396.

Nanba et al. JP 60-204396 teaches the absorption of dyes D32 and D36 in the table on page 29. The absorption maxima of dye D36 is 880 nm and the reflection maxima is 970 nm. The wavelength used in recording is 830 nm (page 29, left column) for the examples disclosed in table 1 on page 30. Example 3 uses dye D36, which has absorption maxima at wavelengths greater than 830 nm. The use of dyes which have an absorption maxima within the range 40 nm shorter and 70 nm longer than the writing wavelength is disclosed in the abstract. The use of lasers including HeNe (632.8 nm), Argon ion (488, 514.5 nm), HeCd (442 and 325 nm) is disclosed on page 28 in the lower left hand column.

8. Claim 1, 2, 5-9 and 12-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nanba et al. JP 60-204396.

It would have been obvious to one skilled in the art to use other disclosed cyanine dyes from the table on pages 9-14 and to use these with appropriate disclosed lasers, such as the HeCd, Ar ion or HeNe, which have emissions at wavelengths up to 70 nm shorter than the maximum absorption of the dyes with a reasonable expectation of successfully writing data into the recording layer based upon the disclosure of using dyes which have absorption maxima up to 70 nm longer than the emission wavelength of the laser.

9. Claims 1, 2, 5-9 and 12-16 are rejected under 35 U.S.C. 102(b) as being fully anticipated by Umehara et al. JP 08-156408.

See examples (in translation) where the dyes B1 and B2 are heptamethine cyanine dyes with absorption maxima at 800 and 820 nm (table 1, [0035]) and are recorded using 780 nm

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lasers. In section [0030] it appears that a 635 nm laser was used to record data "it was record" and in section [0037-0038] it appears that a 630 nm HeNe laser used used to bopth record and reproduce/read the data.

10. Claims 1, 2, 5-9 and 12-16 are rejected under 35 U.S.C. 102(b) as being fully anticipated by Aihara et al. EP 0676751.

Aihara et al. EP 0676751 teaches examples 1-7 in table 1 on pages 21 and 22 (further description of the cyanine dyes on pages 16-20) The use of the resultant media with recording of data at 680 nm and 780 nm is disclosed with respect to table 2 on pages 23-34.

11. Claims 1,2,4-7,15,16 and 18 are rejected under 35 U.S.C. 102(e) as being fully anticipated by Suzuki et al. '519.

see dyes disclosed in columns 6-11 and 13-14 for azo dye embodiments. See the cyanine dyes of column 15 for the cyanine dye embodiments. See also the examples using these.

12. Claims 1,6-8, and 13-15 are rejected under 35 U.S.C. 102(b) as being fully anticipated by Ozawa et al. '307.

See examples 18,19 and 22-25 in table 1 in columns 51-52, which were recorded on using a 780 nm laser.

13. Claims 1-3,5-7, and 15-17 are rejected under 35 U.S.C. 102(b) as being fully anticipated by Kanno GB 2329751.

See examples using styryl dyes and comparative examples 1 and 2 using cyanine dyes.

14. Claims 1,8 and 15 are rejected under 35 U.S.C. 102(b) as being fully anticipated by Suzuki et al. '902.

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See example 4 which uses dye 10 in a medium which is recorded using an 830 nm laser. which is disclosed in table in column 9 as having a wavelength maximum absorption of 892 nm.

15. Claims 1,4-8,11-15 and 18 are rejected under 35 U.S.C. 102(b) as being fully anticipated by Yoshikawa et al. Example 6 uses a azo dye embraced by the formula corresponding to the azo embodiments of the instant claims and having an absorption wavelength of maximum absorption at 646 nm and uses a 633 nm HeNe laser to record data therein. (12/58-13/3)

16. Claims 1-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over **any of the above cited references, in view of** Namba et al. '231.

It would have been obvious to modify the teachings of **any of the above cited references** by adding other dyes to extend their spectral sensitivity and to use them with shorter wavelength lasers as taught by Namba et al. '231 with a reasonable expectation of forming media useful with any laser system and so compatible with more optical recording media players or recorders.

17. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Ootaguro et al. '882 teaches the absorption 4-N,N-diethylamino-4'-nitrosodiphenylamine (ethyl homologue of the compounds shown in p-age 36 of the instant specification) has a maximum absorption at 440 nm.

Usami '550 teaches the use of diphenylamine based compounds as dyes in optical recording media. (3/68-4/1)

Sato et al. '839 teach optical recording media with heptamethine cyanine dyes.

JP 10-134413 and Yanagisawa et al. teaches the use of nitrosodiphenylamine compounds to stabilize other dyes in optical recording media.

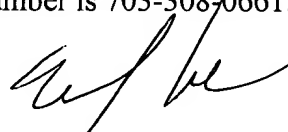
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JP 10-119434 teaches the use of 640 nm lasers with cyanine dyes based optical recording media.

18. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Martin J Angebrannndt whose telephone number is 703-308-4397. The examiner can normally be reached on Available Mondays-Thursday and alternative Fridays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mark Huff can be reached on 703-308-2464. The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9310 for regular communications and 703-872-9311 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0661.



Martin J Angebrannndt  
Primary Examiner  
Art Unit 1756

June 10, 2003